

**AUTHENTICATION MECHANISMS FOR CALL CONTROL MESSAGE INTEGRITY
AND ORIGIN VERIFICATION**

ABSTRACT

The present invention incorporates methodologies developed in the Internet Engineering Task Force (IETF) Internet Protocol Security (IPSEC) Working Group into asynchronous transfer mode (ATM) and frame relay (FR) signaling to provide message integrity and origin authentication. In one implementation the invention provides a virtual private network (VPN) infrastructure with call control message integrity, origin verification, and transit network filtering. The invention utilizes a set of control plane messages based on the IPSEC authentication header (AH) methodology to provide these security mechanisms for ATM and FR network switching equipment and signaling protocols. This abstract itself is not intended to limit the scope of this patent. The scope of the present invention is pointed out in the appending claims.